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THE EXTENSION ANIMAL HUSBANDMAN

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C. D. Lowe, Senior Extension Animal Husbandman,
K. F. Warner, Animal Husbandman in Meat Extension.

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A MEAT CUTTING DEMONSTRATION BY RADIO

By James J. Lacey, Wisconsin College of Agriculture

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(Requests from Wisconsin farmers for help in cutting and curing farm dressed pork were so numerous last fall that "Jim" Lacey, the State animal husbandry specialist, and the home economists had no time to handle them all. With a truly progressive spirit they resorted to the radio. Television might have helped some but it really wasn't needed in this case. The following continuity furnished by Mr. Lacey tells its own story. --K.F. Warner)

Title - Saving Time, Labor, and Money by Cutting Carcasses Right.

Announcer -

Jim Lacey of the College of Agriculture, whom many of you know and who was with us just a week ago, is back again to explain just how he would cut home butchering costs by cutting carcasses right. He is demonstrating in many different Wisconsin communities some of the things that he and others have learned about cutting and curing home-butchered pork. He has been telling me that by cutting a hog carcass in certain ways we can get more meals per family and we can cut the costs of home butchering.

I am asking him to repeat some of the things he has said before during some of these farm programs, because we want to present as complete a picture as is possible, for our listeners, of recommended ways of cutting up the hog carcass for getting the best returns. We have in front of us a hog carcass and I wish, Jim, you would start right in, and as you cut up this carcass explain to me and to our listeners just what you mean when you say "saving time, labor, and money by cutting carcasses right."

Mr. Lacey -

Before I make the first cut I am going to explain one cut that has already been made before the carcass was brought to us. This carcass, as you notice, is split lengthwise through the middle of the back bone. That was done immediately after the hog was killed. Doing it at that time saves considerable labor and effort and it gives the carcass a better chance to cool out and to firm up for the next cutting operation.

The first cut that I make today is to remove the head like this. (cuts). You will notice that I did not need an axe or a saw. I made the cut about half an inch back of the ear and by doing it that way I hit what we call the "axis joint." This peculiar swivel joint permits the hog's head to turn or to rotate. The axis joint is easily dislocated. By inserting a knife you will notice that the head comes off very easily.

Announcer -

What are you going to do with this head?

Mr. Lacey -

I am going to remove the jowl or the cheek with one single cut. The knife blade is kept parallel to the side of the face and the cut is made right close to the jaw bone. That gives us this funny looking, fat piece of meat that I can square up and trim as a cut for Dixie bacon or Dixie squares.

Announcer -

Is that what Wisconsin farmers do with that jowl?

Mr. Lacey -

No. As a rule a Wisconsin farmer uses the lean part of this cut for sausage meat and renders out the fatter part for lard. Some Wisconsin people put this cut in the salt cure and smoke it for bacon. Still others use this piece for pork to go into home-canned pork and beans. This is probably the most general use.

Announcer -

Well you would not get that much in a can of beans.

Mr. Lacey -

That much pork would be about enough for half a ton of beans.

Announcer -

The head and jowl was the first cut. Where do we go next?

Mr. Lacey -

I am going to remove the shoulder with the next cut. I am going to remove it by cutting through the third rib and parallel to the cut that I made in removing the head (saws through 3d rib).

Announcer -

You say to cut off the shoulder, make the cut through the third rib and parallel to that made when you cut off the head?

Mr. Lacey -

That's right. That means that the cut is made just back of the front leg.

Announcer -

What about the shoulder blade? Do you miss it or cut through it?

Mr. Lacey -

Generally I just miss it. Shoulder blades differ some in shape, and occasionally when I cut through the third rib I also saw off the point of the shoulder blade. If I have cut through the ribs I use a knife to make the rest of the cut. When this is done we have this square cut style shoulder. This square cut shoulder is easy to divide into the top and bottom parts. Before I do that I am going to take out these three ribs and the neck bones by cutting in under the ribs at the back part of the shoulder and by following around close to the ribs to the front part and finally in under the neck bones.

Announcer -

That gives us what butchers call the New York style shoulder, doesn't it?

Mr. Lacey -

Yes. I am going a step further than is usually done in home cutting by dividing this shoulder into the picnic shoulder or lower part and the Boston butt or upper part. To do that I cut right through the point where the neck bones were removed and saw through the shoulder blade to divide up the shoulder into the lower and upper sections (saws).

Announcer -

What is the advantage of doing that? Don't most of the folks out on the farm cure that out into a square-cut shoulder without dividing it?

Mr. Lacey -

I would not say that most folks do, but I know that a good many folks do follow that custom. Here's the advantage though in dividing this shoulder up. The fibers or the grain in the lower part run up and down, perpendicularly. The fibers or the grain in the upper part of the shoulder run horizontally so that when this meat is being served eventually it should be cut across the grain.

We were talking about cutting costs by cutting carcasses right, and here's one point that some folks forget. Meat is more appetizing, more palatable when it is cut right, and we make this extra cut to divide the shoulder into two parts so we may have a nicer piece of meat to serve at the table.

Announcer -

Then you recommend cutting the shoulder into two parts?

Mr. Lacey -

Yes, I certainly do. These are usually trimmed up by cutting the shank and the rough edges from this picnic cut and by removing the lard or fat from the outer part of the Boston butt.

Announcer -

Isn't that fat what you call "clear plate"?

Mr. Lacey -

Yes, you're right. That is clear plate and it is used either for salt pork or is rendered and used as lard. When carcasses are extremely fat or lardy, the clear plate is rendered with the rest of the fat and used as lard.

Announcer -

Well that takes care of the shoulder. Now you have taken off one end. I suppose you will go down to the other end next?

Mr. Lacey -

That is exactly what I am going to do. We cut off the shoulder by cutting through the third rib. I am going to cut off this ham by cutting along a definite line. Now watch this. See, I am making this cut with my saw half way between this "H" bone or pelvic bone and the turn in the vertebrae.

Announcer -

Yes, I see.

Mr. Lacey -

Now further than that, this saw is at right angles to the shank, isn't it?

Announcer -

Yes, it is.

Mr. Lacey -

And a third thing is that this saw is also cutting through the fourth vertebrae from the curve in the back bone.

Announcer -

Let's see if I have this straight. To cut off the ham you recommend using the saw half way between the "H" bone and the curve in the vertebrae.

Mr. Lacey -

That's right.

Announcer -

That puts the saw at right angles to the shank and it is cutting through the four vertebrae from the turn in the back bone. One, two, three, four. That's right. I believe I've got that now.

Mr. Lacey -

(saws) Well it's off.

Announcer -

What else are you going to do with that ham?

Mr. Lacey -

I am going to take off the shank by cutting through one-half inch below the hock joint.

Announcer -

Well that is quite a definite place isn't it?

Mr. Lacey -

Yes, that is a definite point. The cut is made at this place because the bone is solid. In meat that is being cured out much of the spoilage occurs in or next to the bone. In this method of cutting the marrow isn't exposed. After I remove the shank I trim up the rough edges of the ham and here it is already to go into the cure.

Announcer -

Well you've got the shoulder and the ham. That's both ends off. Nothing but the middle left, is there?

Mr. Lacey -

This middle section I am dividing into the loin and the side meat; or, as the wholesale meat men call them, the loin and the belly. The cut to separate these is made by beginning just below this large tenderloin muscle and is made straight through across the ribs to a point just below the back bone on the shoulder end. Like this, see? Wholesalers vary the location of this cut depending on whether the loins or the side pork are selling to best advantage. If side pork is selling and loins are not, the loins are cut small. If the loins sell readily and the side pork does not, the loins are cut a trifle larger.

Announcer -

Does that make any difference to our listeners who are butchering at home?

Mr. Lacey -

Well if the farmers like pork chops better than they do bacon, they'll cut the loins larger. If they like bacon better than pork chops they may cut the loin smaller. The point is that you can't have the same piece of meat on both cuts.

Announcer -

That sounds reasonable.

Mr. Lacey -

Now to continue with this loin I am going to split the back fat from the loin proper. I can do that easily by starting the knife at one end of the loin and following the dividing line between the fat and the lean meat. And that isn't difficult is it?

Announcer -

No, you're right, it certainly looks easy.

Mr. Lacey -

The loin doesn't need any further trimming.

Announcer -

What about that back fat?

Mr. Lacey -

It is used for the same thing that the clear plate is, depending on whether the family likes salt pork. If they do they can salt it down.

If they don't, it may be cut in strips, have the skin removed, and be rendered as lard.

Announcer -

There isn't very much left. But what about this side pork over here?

Mr. Lacey -

What is side pork now will be bacon if it is cured and smoked. However, we do have to take out the spare ribs first. I am going to do that by starting my knife under one corner of the ribs, cutting as close to the ribs as I can, and then lifting them out.

Announcer -

That looks easy too when you do it.

Mr. Lacey -

Well it isn't very difficult. There is just one other operation necessary with this side pork cut. I am going to cut off the flank, and because it is thinner than the remainder of the cut, trim off the lower side to square it up. And here we have the piece already for curing and smoking.

Now there isn't much left after we have cut off the head, removed the shoulder and the ham, and separated the loin from the side pork.

You notice how few scraps there are. There is not enough here for sausage meat and every cut that we have made has given us a piece of meat that is already to go into the cure. That is what I meant when I told you at the beginning that there is economy in cutting these carcasses right. Waste is prevented and time is saved because it has taken us less than fifteen minutes to make these cuts even though we did spend some time discussing it. So there you are. Dixie bacon; in other words the jowl. The shoulder divided into the picnic shoulder and the Boston butt. There is the ham with the shank removed. Here's the loin with the back fat removed, and here's the side pork already to be placed in the cure. Now how do you like it?

Announcer -

Well that is fine. You have made this carcass cutting interesting and very clear to me today. And I want to say again for our listeners that you have done this just as you would if you were cutting a carcass out on the farm. Won't you be with us again next Monday to go ahead with this radio home-butchering demonstration by suggesting some of the things that you and others have found out about getting more meals per family when home curing?

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CORN-HOG PROGRAM FOR 1935

The corn provisions of the new program are: The maximum corn acreage that may be planted under 1935 contract is 90 percent of the average for the two years 1932 and 1933 - the same base as was used in 1934. Individual signers may, if they wish, hold out of production anywhere from 10 to 30 percent of the two-year base average acreage and receive corn benefit payments in proportion. For complying with the corn control provisions of the new contract, the individual signer will derive the following benefits: (1) a corn adjustment payment; (2) unrestricted use of the land shifted from corn production and (3) eligibility to participate in any government corn loan program that may be available in the fall of 1935. The corn adjustment payment will be made at the rate of 35 cents per bushel of yield estimated for the number of acres by which the corn land area is kept below the 1932-1933 average. This yield for basing payments will be the average yield determined by the Community Committee for all crop land in the farm which has been in corn at least once during the last five years. The change in yield basis removes the necessity for setting aside a definite tract of land on the farm as "contracted acres," and this designation has been dropped in the 1935 contract. In 1935, the acres planted to corn may be located on any part of the farm. The corn payment will be made in two installments; the first amounting to 15 cents per bushel on the estimated yield from the number of acres that are to be shifted from corn, to be paid as soon as the contract is accepted by the Secretary of Agriculture. The second installment, consisting of the remaining 20 cents per bushel, less the producer's pro rata share of local administrative expenses, will be made on or about January 1, 1936.

The hog provisions are: The individual contract signer is to limit the number of hogs produced for market from 1935 litters to 90 percent of the adjusted average number produced from 1932 and 1933 litters. For complying with the new contract, the participating producer will receive a hog adjustment payment of $15 per head on the number of hogs represented by the 10 percent adjustment. One-half of this payment, that is, $7.50 per head, will be made upon acceptance of the contract by the Secretary of Agriculture. The final payment, less the contract signer's pro rata of the local administrative expenses, will be made on or about January 1, 1936. If producers' participation in the 1935 program is about the same as in 1934, the total adjustment payments are expected to run between 150 million and 165 million dollars. The funds for this aggregate payment will be raised by means of processing taxes continued through one marketing year, beginning November 5, 1935, at approximately the current rate of $2.25 per hundredweight on hogs and 5 cents per bushel on corn. The 1933-34 emergency programs and the 1934 production adjustment program require the collection of processing taxes through two marketing years, ending November 4, 1935. In 1935, as in 1934, the corn-hog production adjustment program will be voluntary and will be carried out largely by the farmers themselves through their community committees and county control associations.

--Release from Agricultural Adjustment Administration.

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SHOULD THERE BE NEW OBJECTIVES IN EXTENSION TO MEET THE NEEDS OF FARM LIFE?

(The following is quoted from the paper delivered by Dr. C. B. Smith, Assistant Director, Extension Service, United States Department of Agriculture, before the 48th annual convention of the Association of Land-Grant Colleges and Universities, Washington, D. C., Nov. 21, 1934).

Our old objectives are sound.

New emphasis, rather than new objectives, would seem to be the need.

The emphasis should be placed still more largely on economic information, and applied economics, national planning, money, and credit. The farmer should have his fair share of the Nation's income, in order that he may build a home and educate his family and share in the cultural and intellectual life of the Nation.

We will continue to teach efficiency in farming and home making, the use of science and power on the farm and in the home.

We will stress, in the future even more than in the past, the recreational, social, and cultural life of rural people.

We should help to build up, in all proper ways, strong, forward-looking farmers' organizations and leaders, and cooperate with all of them in our extension activities.

It may be that, in the multiplicity of things county agents are being called upon these days to do in the way of setting up production-control associations, overseeing compliance, helping in rural emergency relief and rural rehabilitation, handling funds for the payment of drought-distressed cattle and sheep, helping the farmer to get easier credit, they will in increasing measure become administrative officers, rather than themselves being direct teachers. This change in responsibilities will not, however, effect the objectives of extension. Increased net farm income, the development of better men and women, improved homes, the larger life, will still remain the objectives of extension.

This we may take to heart--what we have for the past year and a half called emergency extension work probably will become, in one form or another, a permanent part of regular extension. It is, for the most part, applied economics and service work. Those of us who are looking for a return to the milder forms of extension that are behind us probably

will never see those days again. We have moved on and are doing things in a larger and more aggressive way and will continue to do so. Our original objectives, however--efficiency in agriculture, increased net income, the making of satisfying homes, the development of men and women, abundant living--all are likely to remain our objectives in extension work for a long time to come.

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A.A.A. CATTLE TRANSFER UNIT

The Agricultural Adjustment Administration has established at Kansas City, Mo., an informational and service office to aid in bringing together the owners of cattle (and other livestock) who by reason of the drought do not have sufficient feed to winter them and those who have surplus feeds, especially roughages.

It is not the purpose of this office either to buy or sell livestock directly but rather to cooperate in every available manner in bringing distressed livestock and surplus feed together while the present emergency lasts. Harry E. Reed, is in charge of the office and the address is 742 Live Stock Exchange Bldg., Kansas City, Mo.

Interested parties may obtain from Mr. Reed lists of parties with cattle for sale or being offered for wintering under contract, and lists of those who are in position to take care of additional cattle or other livestock.

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1934 MEAT DATA

The per capita commercial supply of meats and lard, obtained from federally inspected slaughter, excluding relief purchases by the Government, during the first 8 months of 1934 was 70 pounds compared with 74.2 pounds in the corresponding months of 1933, and 68.7 pounds in 1932.

The average live weight of both cattle and hogs slaughtered under Federal inspection during the first 8 months of 1934 was about 2 percent smaller for cattle, and 3 percent smaller for hogs, than during the same period in 1933. They were also smaller than the 5-year average.

Lower dressing yields were also reported for all classes of meat animals except sheep and lambs.

From The Agricultural Outlook for 1935.

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KENTUCKY BEEF PRODUCTION COSTS

By Geo. B. Byers, Wayland Rhoads and H. K. Gayle,
Kentucky College of Agriculture.

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This is a preliminary report covering the records of 16 beef breeding herds located in Union County, Kentucky, for the calendar year 1933.

It was found that grain feeding of calves while nursing, marketing of calves off the teat in the fall as milk fat, grain fed, baby beeves, and limiting the grain fed to the breeding herd resulted in a net return (above feed, labor, and other costs) of $135 per herd. On the other hand five farmers who did not follow these practices failed by $72 per herd to pay all costs, a difference of $207 per herd in favor of these practices. To put this another way, two farmers following these improved practices made a net return of $4.65 per calf whereas the five farmers not following these methods lost $5.39 per calf, a difference of $10.04 per calf.

Grain Feeding of Nursing Calves

Four of the 16 farmers fed grain to their calves while nursing and made a net return of $2.18 per calf. The other 12 farmers who did not feed grain until after the calves were weaned lost $6.23 per calf. Early marketing as well as grain feeding influenced this difference of $8.41 per calf. These four farmers had sold 58 percent of their calves by December 31, 1933, while the 12 farmers had sold less than 2 percent of the calves by this date. Early calves and grain feeding made possible this earlier selling. The calves in the more profitable group were 280 days old on the average and 240 days old for the less profitable herds.

Fall Marketing of Milk Fat Calves

Five farmers who sold part or all of their calves by December 31 made a net return of 67 cents per calf. Eleven farmers who had not sold any of their calves by this date failed by $6.84 per calf to pay all costs. In this grouping as to marketing date, the grain feeding of the calves while nursing and early calves enabled the farmers to have their calves ready for market by December 31 or before. Sixty-eight percent of the calves on the five farms were grain fed and none of the calves were grain fed on the other eleven farms.

Limited Grain Feeding of Cows

Nine herds used less than 325 pounds of concentrates or the

equivalent of about 6 bushels of corn per cow annually and had a feed cost of $11.99 per cow (including pasture and roughage). Seven herds received more than 425 pounds of concentrates per cow annually and had a feed cost of $19.96 per cow. This leaves a difference in feed cost of $7.97 per cow. Offsetting this higher feed cost the seven herds had an average credit of $7.04 per cow for butterfat sold and milk used by the farm family. The nine herds had a milk credit of only 81 cents per cow. With one exception, the sale of butterfat was from the smaller herds where the farmer had available labor to do the milking and thereby secured a weekly cash income. Evidently these cows had the capacity for producing additional milk from the additional grain feeding, since it did not retard the gains made by the calves. The beef produced per cow, average age of calf, additional feed cost per calf, and percent of calves sold by December 31 were practically the same for these two groups. The farmers limiting the grain to their cows made 71 cents more per calf in net returns.

In order that the 16 farmers, who furnished the records for this report and other interested beef cattle men, might compare their quantities of feeds used, costs, income, net returns and factors of efficiency with the average for these 16 herds, 7 high return herds and 9 low return herds, tables 1 and 2 were prepared.

While feed prices varied from farm to farm depending upon the quality of feed, the farm price for corn was approximately 36 cents a bushel; oats 22 cents a bushel; cottonseed meal, $1.90 per hundredweight; bran, $1 per hundredweight; legume hay $5.80 per ton; mixed hay $5.00 per ton; grass hay, $4.60 per ton; and silage $3.50 per ton. Pasture average 79 cents* per month for each cow including the calf to weaning age. While pasture per cow varied from 199 to 291 days, the 16 herds were pastured an average of 257 days per cow annually or 8 1/2 months.

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* This includes stalk fields.

Table 1. Feed Quantities Used Per Head for 16 Beef Breeding Herds in Union County, Kentucky - 1933

Item	Returns above average	Your herd	Average for all herds	Returns average or below
Number of herds	7	--	16	9
Number of cows per herd	20.4	--	24	26.9
FEEDS FED COW HERD & BULL - per cow				
Corn, pounds	316	--	309	305
Cottonseed meal, pounds	1	--	10	14
Other mill feeds, pounds	--	--	1	1
Hay - legume, pounds	1,616	--	1,599	1,589
mixed, pounds	125	--	46	--
grass, pounds	22	--	103	151
Other roughage, pounds	739	--	552	420
Pasture, days	247	--	256	262

Table 1 (cont'd.) Feed Quantities Used Per Head for 16 Beef Breeding Herds in Union County, Kentucky - 1933

Item	Returns above average	Your herd	Average for all herds	Returns average or below
Number of calves per herd	19.6	--	22.1	24.1
FEEDS FED CALVES - per calf				
Corn, pounds	454	--	290	186
Oats, pounds	--	--	2	3
Cottonseed meal, pounds	3	--	4	5
Other mill feed, pounds	2	--	2	3
Hay - legume, pounds	170	--	155	146
mixed, pounds	2	--	1	--
grass, pounds	40	--	18	6
Pasture*, days	--	--	11	18

*Calves ran on pasture with cows.

Table 2. Costs, Incomes, Net Returns and Efficiency Factors for 16 Beef Breeding Herds in Union County, Kentucky - 1933

Item	Returns above average	Your herd	Average for all herds	Returns average or below
Number of herds	7	--	16	9
Number of cows per herd	20.4	--	24	26.9
COSTS - Cow herd and bull - per cow				
Pasture	$6.26	--	$6.62	$6.84
Other feeds and bedding	6.62	--	7.15	7.46
Total feeds and bedding	$12.88	--	$13.77	$14.30
Man labor at 10¢ an hour	1.49	--	1.07	.81
Interest and taxes	2.18	--	2.28	2.34
Depreciation	6.20	--	6.33	6.40
Shelter and equipment	1.35	--	1.91	2.25
Miscellaneous	.39	--	.44	.47
Gross carrying charge	$24.49	--	$25.80	$26.57
CREDITS - Cow herd and bull				
Milk	$5.66	--	$2.51	$ .65
Pork	.35	--	.13	--
Manure	2.07	--	2.17	2.22
Gross credits	$8.08		$4.81	$2.87
NET CARRYING CHARGE	$16.41	--	$20.99	$23.70

Table 2 (cont'd). Costs, Incomes, Net Returns and Efficiency Factors for 16 Beef Breeding Herds in Union County, Ky. - 1933

Item	Returns above average	Your herd	Average for all herds	Returns average or below
COSTS - Calves - per calf				
Net carrying charge of cows...	$17.10	--	$22.81	$26.41
Feed and bedding.....	4.16	--	3.26	2.70
Man labor.....	.19	--	.23	.25
Miscellaneous.....	.32	--	.16	.07
Gross costs.....	$21.77	--	$26.46	$29.43
INCOMES - Calves				
Sales and held for sale.....	$26.87	--	$22.16	$19.19
Manure.....	.19	--	.07	--
Pork.....	.02	--	.02	.02
Gross income.....	$27.08	--	$22.25	$19.21
NET RETURNS	$ 5.31	--	$-4.21	$-10.22
EFFICIENCY FACTORS:				
Percent of calves raised.....	99	--	96	95
Calves raised per cow.....	.96	--	.92	.9
Average age per calf, days....	288	--	250	230
Beef produced per cow*, pounds	533	--	444	391
Percent of nursing calves grain fed	52	--	24	6
Percent of calves sold by Dec. 31	30	--	15	6
Percent of cows on limited grain feed	80	--	74	71
Net cost per cwt. gain	$3.88	--	$5.48	$6.77
Pasture & management returns per cow	$13.04	--	$4.16	$-1.07

* Includes gains on calves only.

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FEED CROPS SITUATION

Supplies of feed grains (corn, oats, barley, and grain sorghums) for the 1934-35 feeding season are the smallest since 1881. The marked reduction was due primarily to the drought, which reduced yields, although the 1934 acreage of feed grains was reduced 9 percent under that of 1933 and was 10 percent under average (1927-31). The 1934 hay crop was the smallest in the 16 years for which comparable figures are available. Moreover, the loss of new seedings in the drought area was extensive. Liberal use of low-grade roughage may offset a large part of the shortage of hay. Prospective 1934-35 supplies of high-protein feeds from domestic processing may be 90 percent of 1933-34 and only 70 percent of average, but almost the same quantities of wheat by-product feeds appear available in 1934-35 as in 1933-34. larger imports of feed grains and other feed stuffs to supplement the local shortage appear probable, but not in sufficient quantity to reduce materially the shortage of feed.

From The Agricultural Outlook for 1935.

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COMPARING SOME RANGE BREEDS OF SHEEP

(The following summary is taken from U.S.D.A. Circular No. 308, entitled "Comparison of Rambouillet, Corriedale and Columbia Sheep under Intermountain Range Conditions," by J. M. Cooper and John A. Stoehr, of the Animal Husbandry Division, Bureau of Animal Industry. -- C. D. Lowe).

The investigations (reported in the above publication) were conducted with an annual average of 664 Rambouillet, 426 Corriedale, and 439 Columbia sheep and lambs, for the 8-year period 1924-31, at the United States Sheep Experiment Station, Dubois, Idaho.

In body weight, at the beginning of the breeding period in the fall, the mature Rambouillet ewes ranged from 116 to 129 pounds, Corriedales from 106 to 122 pounds, and Columbias from 123 to 141 pounds. After shearing in the spring, Rambouillet yearling ewes weighed from 72 to 95 pounds, Corriedales from 72 to 88 pounds, and Columbias from 81 to 98 pounds.

In number of lambs per 100 ewes, Rambouillets gave birth to approximately 99, Corriedales to 102, and Columbias to 106. Of these lambs, the Rambouillets weaned approximately 72, the Corriedales 85, and the Columbias 78. At weaning the Rambouillet lambs averaged approximately 71 pounds, the Corriedale lambs 69 pounds, and the Columbia lambs 77 pounds.

In number of pounds of lamb per ewe bred, the Rambouillets averaged approximately 51, the Corriedales 59, and the Columbias 60. The Rambouillet produced the smallest number of pounds of lamb per 100 ewes because of the small number of lambs weaned. The production of the Corriedale was high because of the large number of lambs weaned, and the Columbia was high because of the relatively high weaning weight per lamb.

In quantity of grease wool per ewe, mature Rambouillets averaged 11.72 pounds of fine-medium and half-blood quality, the Corriedales 9.59 pounds of three-eights-blood quality, and the Columbias 11.71 pounds of quarter-blood quality. Yearling Rambouillet ewes averaged 11.66 pounds, Corriedales 11.18 pounds, and Columbias 12.09 pounds.

Average length of staple of the wool grown by mature Rambouillet ewes was 2.33 inches, by Corriedale ewes 3.41 inches, and by Columbias 3.44 inches. Average length of staple of the wool grown by yearling Rambouillet ewes was 2.60 inches, by Corriedale ewes 4.14 inches, and by Columbias 3.80 inches. In terms of clean wool the yield for mature Rambouillet ewe fleeces was 4.83 pounds, Corriedale fleeces 4.68 pounds, and Columbias 5.86 pounds. Similarly, the clean yield of yearling Rambouillet fleeces was 4.81 pounds, Corriedale fleeces 5.45 pounds, and Columbia fleeces 6.05 pounds.

In percentage of dead or missing ewes the Rambouillet loss was 6.27, the Corriedale loss 7.80, and the Columbia loss 8.65. The percentage of lamb loss from birth to weaning was 27.2 for the Rambouillets, 17.0 for the Corriedales, and 26.8 for the Columbias.

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COOPERATION BY COMMERCIAL AGENCIES IN EXTENSION PROJECTS

By W. E. Morris, Extension Animal Husbandman,
University of Minnesota.

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With a limited staff of specialists and a large State to cover, it is difficult to make a project show noticeable results within a short period of time. In Minnesota, while we have only two extension livestock specialists, we have been fortunate in securing the cooperation of commercial organizations in the promotion of many of our projects, with the result, we believe, that our program has been more effectively promoted than we could have done without such help.

All projects do not lend themselves naturally to such cooperative help. There are certain ones, however, where the assistance of men in allied commercial fields is most effective. This is particularly true of those dealing with marketing problems. The ones with which we have had such assistance are:

1. Wool improvement
2. Lamb grading and marketing
3. 4-H club work with special reference to our Junior Livestock Show

Such cooperation may be in the form of specialist help, in financing, and in a close cooperation which brings the activities of the extension service closer to producers through their commercial organizations. This latter manifests itself in supplying the extension service with facts gained in business experience which can be used to guide producers in management or production problems.

In the wool-improvement campaign our wool cooperative has aided us with such material --information dealing with condition of fleeces as they come from the farm, on grades and quality of wool. With this information we prepared a wool leaflet showing a facsimile of a grading sheet, indicating thereon the penalties suffered by that particular grower because of a low-grade fleece, poor conditioning, bad handling, etc. In this leaflet suggestions were given on handling the flock for improving the wool or conditioning the fleeces before being shipped. This publication was placed in the hands of all sheep raisers in the State. Meetings are held where a representative of the marketing association assists in the program, helping to put over the gospel of better wool. The management of this cooperation is emphatic in the statement that this work shows good results, that Minnesota wool has gained an

identity on the Boston market and is now sought for by buyers who know that Minnesota wool represents a product of high quality and good condition.

In our lamb-marketing work our aim has been to reach the point where a majority of Minnesota lambs will go to market at top prices. We observed on the South St. Paul market that a high percentage of lambs arrived with long tails, as bucks in too thin condition to bring top prices. To put on a campaign to cover the State with our own staff was out of the question. We therefore organized a project on lamb grading, designed to cover the State, devoting at least two days to all important sheep raising counties. The program for the local meeting consisted of demonstrations on grading and sorting of lambs, and on drenching to control stomach worms.

The plan was presented to cooperative commission agencies and the agricultural department of several railroads with a request for the loan of specialists. The requests were granted in all cases. The demonstrations were put on with satisfactory attendance and enthusiasm from the audiences. This campaign has been continued each year for three years. During the last two years, however, we have used, outside our own staff, only men from the cooperative market association - all men with market experience.

The results have been gratifying judged not only by expressions of satisfaction from producers in the county, but as evidenced on the market where our native lambs are now sorting out to the packer or as feeders, highly uniform as to type. Last fall, while on our market, a buyer for a large packing company made this statement: "The lamb runs this year, in spite of the drought, have been the most satisfactory that we have ever had; the lambs are dressing out better than ever before." This was due, in his opinion, partially to a lighter pelt with less dirt, but principally to the lamb-grading demonstrations held over the State. He stated that farmers are learning when a lamb is ready for market. Such results would have been slow in accomplishment if handled by only the extension staff. With a large crew, however, reaching most sheep areas in the State, results are apparent in a short time.

The project is organized by the extension service, and the men who are loaned from the market are scheduled to the county agents by the central extension office as is a regular extension specialist. We believe the plan has been successful enough to warrant its continuation.

Our extension 4-H livestock club program has been made possible only by the cooperation of the various market interests at South St. Paul and the business interests of the Twin Cities. Our recent Junior Livestock Show is the best example of this cooperation. At this show were

exhibited 347 baby beeves, 375 lambs, 158 hogs and 85 pens of market poultry. These were sent from the counties on a representative basis, based on county enrollment in the various projects. The total cost of the show was $12,500 -- of this $7,500 came from the Minnesota Livestock Breeders Association from a State appropriation for the purpose. The balance was raised by contribution from the South St. Paul market interests, the St. Paul Association of Commerce, and others. This financial support was necessary to make a show of this magnitude a success. Numerous trophies are given to the winners of the championships. Prizes are paid to all contestants as an expense payment. The support of the sale by hundreds of business men, however, made this event the success it is.

The total sales of these animals, all of which were sold, amounted to $44,845.66 which is estimated to be $16,160.00 over the cash market for the day. The premiums paid to the exhibitors for their animals represented a 53 percent premium over that. This is encouragement to the young producers. It shows, we believe, a fine type of cooperation from business interests to make an extension project a huge success.

Our agricultural paper, The Farmer-Farm Stock & Home, has aided us materially in our lamb production contests by awarding medals for accomplishment. These medals are given to the 100 Pounds-Of-Lamb-Per-Ewe-Club, as they term it. The medal is an award to the contestant who for the first time in the contest produces 100 pounds of lamb or more as an average for his flock.

Possibly livestock projects offer a better opportunity for cooperation by business people in their promotion. At least we have found this type of help available and highly satisfactory in this work. There may be opportunity for critisism by competitors. Care needs to be taken to offer all a chance to do some of the work, but so many do not have a staff adapted to educational work or which can be spared to do such work. We have found that the plan gets results, and thus far have no regrets. Therefore, we hope to continue making use of good help when we can find it.

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MADDOX TO WASHINGTON STATE

Con S. Maddox, a graduate of the Missouri College of Agriculture, became extension animal husbandman of the State College of Washington at Pullman on January 1. Previously Mr. Maddox has been engaged in extension work in South Dakota and Nebraska and in charge of creep feeding experiments at Sni-a-Bar Farms.

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THE BANG'S DISEASE PROJECT

The Bang's disease project, which is now being conducted in cooperation with the livestock sanitary officials of practically all of the States, is made possible by the allocation of funds provided through the LaFollette amendment to the Jones-Connally Act. These funds are to be available until December 31, 1935.

Extension workers throughout the United States can assist in the Bang's disease project by disseminating to cattle owners proper information as to the conditions surrounding the operation of this work. In each State the project is directed by the Federal inspector in charge of tuberculosis eradication, and the Bureau of Animal Industry is cooperating with the State livestock sanitary authorities of each respective State; therefore, all matters pertaining to signing of agreements should be taken up with either the State livestock sanitary official or the local cooperating Federal official in charge. The following general suggestions are offered for the guidance of extension workers in advising cattle owners regarding the project.

Owners who desire to eliminate from their herds cattle reacting to the agglutination blood test for Bang's disease in accordance with the regulations governing this project, B.A.I. Order 347, are required to sign an agreement to this effect. Agreement forms, B.A.I. Form T.E. 33, are supplied by the Federal Bureau of Animal Industry through local inspectors in charge, or the State livestock sanitary officials cooperating in this project. The signing of these agreements by herd owners is entirely voluntary; however, after entering into this agreement, owners are expected to abide by the conditions contained therein. It is, therefore, very important that cattle owners fully understand the conditions of this agreement before signing.

An important condition of this agreement is that all reactors to the blood test for Bang's disease found in the owner's herd be branded and marketed for slaughter in accordance with directions issued by the authorities in charge of the project. All reacting cattle are to be marketed within 30 days after appraisal, with the possible exception of some meritorious cases where an extension of time may be granted.

It is the present intention of the Federal Bureau of Animal Industry to apply an initial test and one retest to herds, including suspects of first test, of owners cooperating in this project, and a retest of suspects found on the second test. Herd owners will be compensated for cattle eliminated as a result of these tests. The maximum Federal payment for purebred cattle is $50, and for grades $20. The

owner is entitled to all the salvage obtained in marketing the cattle, but the total payment and salvage cannot exceed the appraised value. For example: if a grade animal was appraised at $50 and the salvage was $20, the owner would be entitled to a Federal payment of $20. But in case an animal was appraised at $35 and the net salvage was $16, the owner would receive a Federal payment of $19.

Paragraph (b) of section 1 of the owner's agreement, T.E. Form 33, relates to the addition of cattle to herds from which reactors to the blood test for Bang's disease have been eliminated.

The agreement provides that the owner shall continue the blood testing of the animals in his herd in accordance with the accredited Bang's disease herd plan of his State, if and when his State adopts such a plan. At present such plans are in effect in a number of States.

The owner further agrees that he will not sell or assign, in whole or in part, his agreement, and this refers especially to the Federal payment where herds are mortgaged. The owner of the mortgaged herd, of course, has no right to dispose of any of the said animals without the knowledge and consent of the person holding the mortgage; therefore, in cases of this kind, it is important that the owner be fully authorized by the mortgagee to dispose of any cattle that may react to the test, with the understanding that Federal payment must be made to such owner and not to the mortgagee.

Before entering into the agreement to eliminate from their herds cattle that may react to the agglutination test for Bang's disease, owners should realize in advance the situation that will confront them if they are required to dispose of a large portion of their herds. It is important also that all owners who participate in the Bang's disease project be fully informed that in order to obtain the best results it is necessary to follow carefully all instructions regarding the sanitary care of their herds.

There is a great demand for Bang's disease work in many States and it is believed that there will be more calls for the testing service than can be given attention with the present facilities for handling the work. This is not true in all States, as conditions vary considerably in a matter of this kind.

Most of the States have literature available for distribution covering the subject of Bang's disease in cattle, which should be of much value from an educational standpoint. The Federal Government has available Farmers' Bulletin 1704, on Bang's disease, which contains important information regarding the handling of herds to prevent the spread of this disease.

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KEYSTONE GOLD MEDAL COLT CLUB

By C. A. Burge, Extension Livestock Specialist,
Pennsylvania State College

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The raising of good draft horses has become a profitable enterprise on many Pennsylvania farms. Between thirty and forty thousand head of horses were brought into the State during the last 12 months. There has been a very marked increase in the number of mares bred this past spring.

The Keystone Gold Medal Colt Club project has become very popular with our farmers. Large crowds of interested farmers have been in evidence at the different round-ups held this fall. Marked interest and friendly rivalry have developed in many communities as a result of this work. These clubs were first started in the fall of 1928 in five counties with 75 colts competing. In the fall of 1934, twelve counties exhibited 225 colts.

To win the coveted prize in the Keystone Gold Medal Colt Club, a colt must gain at least 600 pounds during the year and place above all colts gaining less than 600 pounds in the club round-up. If defeated by a colt gaining 500 pounds and less than 600 pounds, the colt would be eligible for a silver medal only. A silver medal is awarded to all colts gaining 500 pounds and less than 600 pounds, if they place above colts gaining 400 pounds and less than 500 pounds. Bronze medals are awarded to colts gaining 400 pounds and less than 500 pounds.

Many of the colts exhibited at last fall's round-ups were eligible for a gold medal. A number of these colts were well grown out and weighed from 1200 to 1500 pounds. Any farmer in the community owning a good stallion can be very readily interested in this type of project. The interest in good horses is very evident on the part of our Pennsylvania farmer.

The purpose of the club is to emphasize the importance of good draft blood, as well as proper feeding and care of the growing colt. Members of the colt club grow out their colts with the idea of making a required gain in one year. The foals are usually shown at the county fair or at a special horse field day, at which time they are weighed. One year later medals are awarded on the basis of gain in weight and show ring record. A string of 15 or 20 well-developed draft colts makes a very impressive showing. This project drives home the importance of good care and feeding.

The value of horse extension projects is indicated by the fact that more mares are being bred and more foals are seen on the farms than has been the case in many years. The horse is a source of power produced on the farm and the fuel for him is produced at home at low cost.

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1934 CATTLE AND BEEF DATA

Total slaughter of cattle and calves under Federal inspection in 1934, not including Government relief cattle, probably will total about 15,500,000 head, which is an increase of about 2,000,000 over 1933, and the largest yearly total on record. Total purchases of cattle and calves for Government account up to December 29 amounted to 7,760,000 head. Of these more than 1,300,000 were condemned and killed at point of purchase.

The proportion of cows and heifers in the total inspected slaughter in 1934 was much larger than for any recent year. During the first 8 months, slaughter of cows and heifers for commercial account was 630,000 head larger than for the corresponding period of 1933, while the increase in slaughter of steers was only 387,000 head. Of the cattle and calves purchased by the Government, about 23 percent were calves. Cows and heifers will probably comprise about 80 percent of the total Government purchase.

Cattle imports during the first 8 months of 1934 totaled 55,000 head, compared with 60,000 and 66,000 respectively, for the same periods of 1933 and 1932. Imports for the entire year of 1929 totaled 505,000 head, while for 1933 they were only 80,000 head.

Supplies of canned beef inspected by the Bureau of Animal Industry for entry into the United States from January 1 to August 31, 1934, amounted to 25,644,000 pounds, which is 9 percent less than those received in the corresponding period of 1933, but 64 percent more than were received during the first 8 months of 1932. Imports of canned beef in 1929 amounted to 77,481,000 pounds, while in 1933 such beef totaled 43,183,000 pounds. Imports of fresh and frozen beef during the first 8 months of 1934 totaled 137,000 pounds, compared with 342,000 pounds during the same period of 1933.

Cattle and beef imports combined in the first 8 months of 1934 were equivalent to less than 3 percent of the commercial cattle slaughter under Federal inspection during the same period.

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COMMERCIAL LAMB FEEDING PROFITABLE IN MICHIGAN

By Delmer H. LaVoi,
Extension Specialist in Animal Husbandry.

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Commercial lamb feeding was profitable in Michigan according to reports made by 50 cooperators on 1933-34 operations. Around 300,000 lambs are commercially fed in Michigan each year. These lambs are mostly shipped in from the western States and vary in weight and arrive at different times of the year. Some of the feeders feed throughout the year and usually stock the heavier lambs. Close to 400 feeders are actively engaged in this enterprise in Michigan, which is centered in the south central part of the State.

The systems of feeding vary somewhat as both self-feeding and hand-feeding methods are followed. Some feeders run their lambs in corn fields exclusively and use no housing whatsoever. The rations used show a wide variation with both home-grown and commercial feeds being used. Some of the feeders purchase nearly all the feeds they use. With these feeders salvaged grains are popular.

Since there has been considerable controversy concerning the relative merits of hand vs. self-feeding and since there has been a difference of opinion as to the actual cost of gains, it was decided that a system of uniform records which would show costs and returns would be of value to our lamb feeders if handled in a cooperative way. This cooperative project was started four years ago and it has increased in popularity each year. In 1933-34 fifty feeders finished their records and it is upon these reports that the following analysis has been made. Each feeder's report is summarized for him and serves as a record of his year's operations.

The reports submitted by these men gave complete records on the costs of the lambs when bought, the amount and value of feed fed, time spent in taking care of the lambs, all expenses, receipts from the sale of lambs and wool and other credits. The feeders showed excellent cooperation and fed a total of 40,047 lambs, an average of 801 head per farm. Of these lambs 36,000 came from nine different western States, while 4,000 were Michigan natives. With this number of lambs on 50 farms we feel that average figures attained give a composite picture of lamb feeding in Michigan and a good basis of comparison for the individual feeder.

A further study of the report shows that of the 801 lambs purchased per farm, 767 were finished. Thus a death loss of 4.2 percent

occurred for the 116-day average feeding period. The weight of the lambs varied from 44 to 86 pounds at the start, with an average of 62 pounds for all feeders. The average weight lambs made the cheapest gains, but the lightest lambs had the widest margin and the greatest profit per lamb.

The average total gain per lamb for the 116-day feeding period was 23 pounds. This is based on market weights, in each case less death loss and shrink. The average gains of the lambs per day on the farms varied from 0.06 to 0.50 pound and averaged 0.20 pound for all lambs on feed. The lambs making the fastest gains had a cost per pound of gain approximately one-half that of the group of lambs making the lowest gains.

A total of 147 pounds of concentrates and 131 pounds of roughages, on the average, were fed each lamb. The cost of the concentrates was 82 cents per hundredweight and of the roughages $7.26 per ton, thereby making the feed cost per lamb average $1.69. This was 81 percent of the $2.08 total cost of fattening a lamb. The remaining costs were labor at 6 percent, building and equipment 6 percent, interest 4 percent, shearing 1 percent, and other costs 2 percent.

In studying the costs per pound of gain the reports show that 6.4 pounds of concentrates and 5.6 pounds of roughage were required to produce a pound of gain. This made the feed cost 7.3 cents per pound of gain. Figuring in the charge for buildings and equipment, labor, interest, shearing and other costs amounting to 1.7 cents the total cost per pound of gain averaged nine cents. These figures show that a difference in feed costs will cause the greatest difference in cost of gain and profits of any of the single factors affecting costs. In this report labor was charged at 15 cents per hour, interest was figured at 7 percent and the building and equipment charge covers depreciation, interest, and repairs for that share used by the lambs.

The cost per hundredweight of the lambs averaged $6.22 at the farm. The sale value per hundredweight was $8.23, which was market value minus delivery costs. This shows a gross margin of $2.00 per hundredweight. Total charges, including the cost of the lamb was $6.12 and total credits including wool, pelts and manure was $7.91. Manure in this case was credited at $1.25 per ton. This shows there was an average profit of $1.79 per lamb fed out and on the basis of feed fed a return of $2.21 was made for each dollar of feed fed.

A further analysis of the records shows that there are many factors affecting lamb feeding costs and returns. The principal ones are, the number of lambs on feed, time of purchase, length of feeding period, method

of feeding, mortality, feed costs, gain per lamb per day and margin. A brief explanation of these shows that the feeder with a large number of lambs fed benefited by being able to buy feed in greater quantities and at a saving in cost. In this case labor and housing costs were also proportionally less. The date of purchase affected the ultimate returns of lambs as is shown by the fact that lambs purchased from October 15 to November 15 cost the least per hundredweight, made the cheapest pounds of gain and returned the greatest profit per lamb. The later purchased lambs sold for the highest price, but had a smaller margin due to the higher purchase price. The weight of the lamb is important from the standpoint of the length of the feeding period. In this particular report the lighter lambs returned the most profit due to a margin of $2.62 per hundredweight. The average weight lambs made the most rapid gains, but the profit was lower due to less margin. The length of the feeding period or the number of days the lambs were on feed was closely associated with the weight of the lambs when they were purchased. The short-fed lambs made the most rapid gains and at the cheapest costs per pound. These lambs weighed 64 pounds at the start and put on 20 pounds of gain per lamb in the 80 days they were fed.

Self-feeding was closely associated with the short feeding periods and rapid gains. Forty-two percent of the farms keeping these reports used the self-feeding system. A comparison of the hand-feeding system with the self-feeding system shows that the average mortality was about the same, 4.3 percent as compared to 4.1 percent. The days on feed, hand-fed 123 days and self-fed 113 days; average gain hand-fed 0.18 pound, self-fed 0.21 pound; margin hand-fed lambs $2.76, self-fed $1.93; pounds concentrates per pound of gain, hand-fed 6.3, self-fed 6.7; pounds of roughage per pound of gain, hand-fed 7.4, self-fed 5.1. Total cost per pound of gain, hand-fed 10.8 cents, self-fed 8.6 cents; profit per lamb, hand-fed $1.63, self-fed $1.87. There were more lambs self-fed, however, than hand-fed.

By further studying these efficiency factors which affect lamb feeding costs, it was shown that the feeders who were better than average for the group in having low mortality rates, who had their lambs on feed fewer days, with lower feed costs per pound of gain, but with greater gain per lamb per day, and with greater than average margin, were men that produced nearly three times the profit per lamb as compared with those that excelled in only one of the above factors or measures. This shows that there are many factors which affect profit or loss in lamb feeding and it is quite essential that a feeder make a close study of these factors for the individual year in which he feeds. This is especially true when feed costs are high and the purchase price of the lambs are comparatively high in relation to feed costs. At the present price of feeds the costs per pound of gain will be considerably higher for 1934 as compared to 1933, thereby making it necessary for the feeder to have a wider margin than in 1933 in order to break even.

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MEAT EXTENSION WORK IN LOUISIANA

By W. T. Cobb,
Extension Animal Husbandman, Louisiana.

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Conditions existing in the beef-cattle industry in Louisiana due to the cattle-tick quarantine and to depressed markets for our type of cattle having precluded the possibility of arousing fresh interest in the purely productive projects, this office has looked for other activities that seemed in line with current needs. The home utilization of meats seemed a likely project on which to concentrate. This we have done.

Pork curing in ice and cold storage plants has about reached a point where no new plants can be induced to come in and the sale of the idea to the people rests largely with individual ice companies. Inasmuch as our 45 plants largely cover the northern end of the State, few if any farmers are farther than 15 miles from a safe curing plant. Interest in the use of these facilities has grown to a remarkable extent with the result that we are curing more than 3,000,000 pounds of meat yearly in these plants. We expect these figures to be almost doubled this season due to the increased activities of the ice-plant owners.

The work with the beef-canning projects has been carried along with the home demonstration agents who have made the canning of beef one of their major projects in this State.

The extension specialist has confined himself to giving demonstrations and instructions on the cutting and the handling of the meat prior to canning. The details of the canning have been in the hands of the home demonstration agents or the canning specialist with the result that we have the closest harmony in our work. It might be well to give the method of procedure we have used.

The methods used in furthering the meat work through the home demonstration agents has taken the form of demonstrations in cutting and canning. Some of these demonstrations are leader-training meetings in which the form of demonstration is slightly different than where regular farm people make up the group. It is not expected that we can train expert meat cutters, but we expect with the leader-training schools to be able to give enough training so that the leaders and the home agents will be able intelligently to supervise the cutting of the carcasses for the most economical use of the meat in canning.

In the leader-training schools we also have opportunity to impress on the leaders some of the factors that make for quality in meat and bring out the lessons of good breeding and good feeding. Every demonstration is an opportunity to bring out better production methods, to show what constitutes good meat, to stress the necessity for proper slaughter and proper curing of beef if the best results are to be obtained.

In these demonstrations we also are able to give some information on the identification of the various cuts, a matter in which most of the farm people, and town people as well, are woefully ignorant. In the leader-training demonstrations identification and the utilization of the various cuts are stressed more than at other meetings.

The procedure we use is for the home demonstration district agent to outline an itinerary that can be approved by the specialist and is agreeable or convenient to the local agents. Then all arrangements for the demonstration are left in the hands of the local agent who provides the materials and the necessary publicity.

On the meeting day the meat specialist and the canning specialist are usually on hand, although the canning specialist may leave the canning in the hands of the local agent.

The demonstration, from the meat specialist's standpoint, consists of discussing the points above-mentioned prior to the actual cutting demonstrations. Then one-half of the carcass is cut into the various standard cuts, stress being put on the fact that the job is not a difficult one, and only good tools and good beef are necessary for a good job, provided a little attention is given the details. After half the carcass is properly handled two or more from the crowd are asked to assist in cutting the other half of the carcass with the result that some person--- usually one who has done some meat cutting -- is given a little more experience, in order to be of help to the community in future meat-canning work.

During the fall season of 1934 we have conducted 30 of these demonstrations in 26 parishes of the State, and a total of some 900 to 1,000 people have been reached. And the program is just beginning for the present season.

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GENERAL LIVESTOCK SITUATION

Livestock has been reduced more rapidly in 1934 than in any previous year, and by January 1, 1935, numbers are expected to be only around four-fifths of those a year earlier. The reduction was due partly to the Government's hog adjustment program and partly to the drought of 1934, including natural liquidation because of feed shortage and the cattle- and sheep-buying programs designed to relieve the drought situation. The total number of meat animals on farms at the end of 1934 will probably be the smallest in more than 35 years. --From The Agricultural Outlook for 1935.

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Federal

"The Agricultural Outlook for 1935" - U.S.D.A. Miscellaneous Publication No. 215.

"Boys' and Girls' 4-H Club Work, 1933" by Madge J. Reese - U.S.D.A. Extension Service Circular 207.

"Determining the Age of Farm Animals by Their Teeth" by George W. Pope - U.S.D.A. Farmers' Bulletin No. 1721.

"Pork of Good Quality Grown Efficiently on Corn-Soybean Ration" by J. H. Zeller and O. G. Hankins - U.S.D.A. Yearbook Separate No. 1424.

"Report of the Chief of the Bureau of Animal Industry, Fiscal Year 1934" by J. R. Mohler.

"Report on a Preliminary Field Survey of the So-called 'Alkali Disease' of Livestock" by Kurt W. Franke, et al. - U.S.D.A. Circular No. 320.

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"Pastures for Alabama" - Alabama Experiment Station Leaflet No. 7.

"Some Factors Affecting the Cost of Raising Pigs to Weaning Age" by J. C. Grimes, et al - Alabama Experiment Station Circular 68.

"Feeding, Docking, and Castrating Spring Lambs" by J. C. Grimes, et al. - Alabama Experiment Station Circular 69.

"Slaughtering, Cutting, and Canning Beef on the Farm" by R. S. Sugg and Margaret Garrett - Alabama Extension Service Circular 145.

"A Study of Use of Rice By-Products for Feeding Swine and Effects on Quality of Pork" by Edgar Martin - Arkansas Experiment Station Bulletin No. 303.

"Permanent Pastures" by Martin Nelson - Arkansas Experiment Station Bulletin No. 307.

"Statistical Methods of Analysis Applied to the Feedlot Gains of Lambs" by James C. Foster - Colorado Experiment Station Technical Bulletin No. 10.

"Mineral Supplements for Fattening Steers" by Geo. E. Morton, et al. - Colorado Experiment Station Press Bulletin 82.

"Mineral Supplements for Lamb Fattening Rations" by Geo. E. Morton, et al. - Colorado Experiment Station Press Bulletin 83.

"Forage Crops for Regular and Emergency Feeding" by E. D. Alexander - Georgia Extension Service Bulletin 445.

"Sweet Potatoes as a Feed for Swine" by F. R. Edwards and Z. A. Massey - Georgia Experiment Station Bulletin 181.

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"Cheaper and More Profitable Pork Through Swine Sanitation" by E. T. Robbins - Illinois Experiment Station Circular 288 revised.

"How Use Contracted Acres Under the Wheat and Corn-Hog Reduction Programs" by J. C. Hackleman and C. M. Linsley - Illinois Extension Service Circular 420.

"Late-Sown Emergency Feed Crops for Illinois" by L. H. Smith - Illinois Extension Service Circular 423.

"Types of Farming in Illinois - An Analysis of Differences by Areas" by H.C.M. Case and K. H. Myers - Illinois Experiment Station Bulletin 403.

"Improving the Domestic Market for Lard" by Rainer Schickele and Theodore W. Schultz - Iowa Experiment Station Bulletin No. 319.

"The Lard Market at Home and Abroad" by Rainer Schickele and Theodore W. Schultz - Iowa Experiment Station Bulletin No. 320.

"Drouth Emergency Rations for Iowa Livestock" - by C. C. Culbertson, et al. - Iowa Extension Service Circular No. 206.

"Meeting the Feed and Feeding Problems in Drought-Stricken Areas" - Kansas Extension Service Circular 105.

"Feeding Grain to Beef Calves on Pasture Before Weaning" by C. I. Bray - Louisiana Experiment Station Bulletin No. 249.

"Fish Meal as a Feed for New England Live Stock" by J. G. Archibald - Massachusetts Extension Service Leaflet No. 152.

"The Corn-Crib or Slat-Fence Silo" - Minnesota Extension Service Folder 49.

"Feed and Seed for 1934-1935" - Minnesota Extension Service Circular 49.

"Feeding Methods and Rations for Fattening Lambs" by P. S. Jordan and W. H. Peters - Minnesota Experiment Station Bulletin 306.

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